

Attorney Docket No. ESST-03901

Remarks

Reconsideration of the pending claims of this application is respectfully requested.

Status of the claims: Claim 34 has been cancelled. Claims 1-22 were cancelled in a previous amendment. Claim 35 has been added.

The invention:

The invention, as described in the specification and as claimed in the amended claims, provides a novel multiple modulus conversion (MMC) method for obtaining a plurality of index values associated with a plurality of moduli. Such a method may be used in a communication system configured to map frames of information bits onto predetermined communication signal parameters. Briefly, the method includes obtaining an input value and then representing the input as a plurality of sub-quotients. A plurality of multiplicands are then obtained that are estimates of the inverses of the moduli. Then, the method performs a short word inverse multiplication method for each multiplicand, where the output sub-quotients of each inverse multiplication are used as the input sub-quotients for the next operation. Then, an index value associated with each modulus is determined. The index values are equal to the outputs $R_i = R_{i,0}$ of the short word inverse multiplication method.

Unlike Betts, it does not perform a pseudo-remainder adjustment after each multiplication, where each multiplication by an inverse $1/m$ is followed by a remainder adjustment. The invention instead provides an adjustment of the pseudo-remainder only once per modulus. In practice, this novel approach results in a significant savings in the number of calculations required, thus greatly speeding up the process.

Rejections

Claims 25-25 stand rejected under non-statutory double patenting. In response, Applicant has included a terminal disclaimer included here in.

Claims 30-31 stand rejected under 35 USC 101 for being directed to non-statutory subject matter. Amendments were made to Claim 30, and thus 31-33 by their dependence on Claim 30, to include the practical implementation of the claimed method.

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Claims 34-35 stand rejected under 35 USC 103 over Zhang in view of Betts. In response, Applicant has cancelled claim 34, and has amended Claim 35 to particularly include the limitations not included in these references, either considered individually or in combination.

Amendments made:

In order to overcome the rejection over 35 USC 101 and to clarify the invention, applicant has amended Claim 30, which has Claims 31 and 33 dependent upon it, to include the practical application of the multiple modulus computation. Furthermore, Claim 35 has been amended to include the limitation that the pseudo remainder adjustment is made only at the last multiplication step, where the step is exclusive of any pseudo remainder adjustments after each multiplication, and these amendments are supported in the specification as filed. Thus, as the examiner indicated, this limitation is not found in Betts or Zhang, either considered alone or in combination.

Amended Claims 30-33 are supported by Figure 4 and related description in the specification. Amended Claim 35, is supported by Figure 3 and related description in the specification. Thus, no new matter has been added by the amendments.

Distinctions from the Cited Prior Art

The claims are distinguishable from the cited reference Betts et. al., U.S. Patent Number 5,859,877. In contrast to this reference, the invention described in the specification and as claimed in the amended claims does not perform a pseudo-remainder adjustment after each multiplication. Betts requires this step, as illustrated in the method described by Betts et al. in column 12 of 5,859,877, each multiplication by an inverse $1/m$ is followed by a remainder adjustment. The invention instead provides an adjustment of the pseudo-remainder only once per modulus. In practice, this novel approach results in a significant savings in the number of calculations required, thus greatly speeding up the process. The invention as claimed in the presently amended claims is distinguishable from Betts, is not disclosed or suggested by Betts, and is not anticipated or rendered obvious in light of Betts.

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Conclusion:

Based on the arguments above, the claims as amended herein, along with equivalents, are patentable in light of the prior art. Applicant respectfully requests an examination of the claim limitations, and include consideration of equivalents allowance of these claims. If the examiner agrees with these arguments, then Applicant accordingly requests allowance of the claims.


If the Examiner finds that a telephone conference would expedite the prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

A two month extension of time is hereby requested, along with any further extension that may be required.

The Commissioner is authorized to charge the fee for extensions if needed and any additional fees due or credit any overpayment to Deposit Account No. 50-2421.

Sincerely,

Dated: 08/15/2005


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